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by Professor L. E. Dickson, of the University of Chicago, on "Certain aspects of a general theory of invariants, with special consideration of modular invariants and modular geometry." It was a great satisfaction to listen to two such masters of exposition as Professors Osgood and Dickson and to have the results of long investigation in important fields so clearly set forth that even non-specialists in those fields could follow and understand at least sufficiently for real enjoyment. These lectures will doubtless be published and will thus become available as important contributions in their respective fields.

Six other colloquia have been held by the Society at intervals of three or four years and thus a body of mathematical investigations is gradually forming, as one product of our own membership, which is unique in character and importance. The attendance of 51 auditors at this colloquium exceeded that of any previous one, the nearest approach being that of the Yale colloquium in 1907 when there was an attendance of 43. There were 25 at Ithaca in 1901, 31 at Boston in 1903, and 28 at Princeton in 1909. The Madison colloquium was also marked as the only one thus far held in the West. Indeed, it was the "farthest west" summer meeting except the one in St. Louis in connection with the World's Exposition in 1904.

BOOK REVIEWS.

W. H. BUSSEY, CHAIRMAN OF THE COMMITTEE.

College Algebra. By WILLIAM BENJAMIN FITE. D. C. Heath & Co., Boston, 1913. iv + 283 pages. $1.40.

The book covers the usual topics of elementary algebra in about the conventional order. In general, the treatment is lucid and the proofs are as rigorous as the limited comprehension of young students will permit. There are nineteen chapters on the following topics: The fundamental operations, factors and multiples, fractions, linear equations in one unknown, systems of linear equations in two or more unknowns, fractional and negative exponents and radicals, quadratics, systems of equations in two unknowns solvable by means of quadratics, progressions, permutations and combinations, mathematical induction, complex numbers, theory of equations, determinants, inequalities, partial fractions, logarithms, variation, and infinite series.

In Chapter I the fundamental operations are defined geometrically; the assumptions concerning real numbers are definitely stated, and the consequences drawn as theorems. While the teacher may find this treatment desirable, it will probably prove of little real value to those students for whom the book is intended.

In Chapter V one method of solution for systems of linear equations in two or more unknowns is by the use of second and third order determinants as formulae. Those teachers for whose purposes such an elementary treatment of determinants is sufficient may omit Chapter XIV in which determinants are more extensively treated. In Chapter XI the treatment of mathematical induction is particularly commendable for the way in which it emphasizes both parts of the proof; namely, the direct verification of the theorem for the smallest admissible value of the integer, and the proof that if the theorem is true for one value of the integer, it is true for the next greater value.

In Chapter XII the concrete geometrical treatment of complex numbers is noteworthy. However, for students who have not studied trigonometry, articles 134–138, which involve the polar representation of complex numbers and their consequences, must be omitted.

In the last chapter the treatment of infinite series does not seem to belong to such an elementary text. It would seem preferable to omit it, and give a little broader discussion of "Limit," in Chapter IX, in treating infinite geometric series. The author's omission of the symbol for infinity and the word infinity itself, except as it is implied in the phrase "infinite series," in order to avoid the misinterpretation of ∞ as a definite, fixed number, seems very undesirable. The symbol is so convenient and is used so much in all mathematical literature, that the remedy against its misinterpretation is not to omit the symbol or word, but to retain it and give it the proper meaning.

The introduction of some of the principles and problems of analytic geometry is a desirable innovation in this text where graphical methods are used freely. In general, the book is by no means radical either in treatment or subject matter, and it will probably find favor with many teachers.

H. L. Slobin.

PROBLEMS AND QUESTIONS.

Remarks by the Managing Editor.

The solutions of problems have not come in as promptly during the vacation season as at other times of the year. Hence none are given in this issue, those on hand being held over till November, when it is hoped that a full supply will be ready.

An examination of the problems proposed during this year, and of the solutions given, reveals the fact that, for the most part, solutions are not forthcoming until several months after the problems are proposed, showing that there is an *abiding interest* among the readers of the Monthly in these problems and that, even when solutions are not sent in immediately, they may still be expected later on.

Below is given an analysis of the situation so far as concerns the present year. We are glad to publish solutions of problems whenever they may have been proposed, but we are especially anxious to clear up by December, if possible, those thus far proposed this year, and we would urge all who are interested in this department to send in solutions to the Committee as promptly as may be.